

Appln. No. 10/665,674
Amendment dated June 30, 2006
Reply to Office Action mailed December 20, 2005

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This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims (deleted text being struck through and added text being underlined):

1. (Currently Amended) An alcohol sensor system for vehicles comprising:
 - a vehicle;
 - a main tube coupled to said vehicle such that said main tube is accessible to a user while in a driver's position within said vehicle;
 - a sensor assembly operationally coupled to said main tube for detecting intoxicants in a breath of said user when said user blows into said main tube;
 - a microprocessor operationally coupled to said sensor assembly;
 - an ignition system of said vehicle being operationally coupled to said microprocessor such that said ignition system cannot be activated until said user has blown into said main tube;
 - wherein said microprocessor prevents activation of said ignition system when a level of intoxicants detected by said sensor assembly is over a pre-determined level;
 - wherein said microprocessor activates a relay to enable said ignition system to permit said ignition system to be used to start said vehicle when said level of intoxicants detected by said sensor assembly is below said pre-determined level;
 - wherein said sensor assembly uses gas chromatography to detect said level of intoxicants;
 - wherein said sensor assembly comprises:
 - a sample inlet tube environmentally coupled to said main tube;
 - a carrier-gas supply flow controller coupled to said sample inlet tube for regulating flow of exhaled breath through said sensor assembly;

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a chromatographic column coupled to said carrier-gas supply flow controller, said chromatographic column having an exit:

a resistance measuring means having an opening positioned adjacent to said exit for measuring electrical resistance of a fluid passing through said exit; and

a column oven coupled to said chromatographic column for heating said exhaled breath as said exhaled breath passes into said chromatographic column whereby elements of said exhaled breath are separated by retention time within said chromatographic column before passing through said exit.

2. (Previously Presented) The alcohol sensor system for vehicles of claim 1, further comprising:

a locking means for physically preventing turning of an ignition key; and

wherein said microprocessor is operationally coupled to said locking means for physically preventing turning of said ignition key when said level of intoxicants detected by said sensor assembly is over a pre-determined level.

3. through 4. (Cancelled)

5. (Currently Amended) The alcohol sensor system of claim [[[4]]] 1, wherein said resistance measuring means comprises:

a silicone wafer defining said opening of said resistance measuring means;

a pair of thermal detectors each having a plurality of serpentine strands of nickel wire, said thermal detectors being positioned proximate said opening; and

a wheatstone bridge being attached to said thermal detectors.

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6. (Previously Presented) The alcohol sensor system of claim 5 wherein each of said strands of nickel wire is approximately 20 microns thick and approximately one inch long.

7. (New) An alcohol sensor system for vehicles comprising:
a main tube for coupling to a vehicle such that said main tube is accessible to a user while the user is seated in a driver's position in the vehicle;

a sensor assembly operationally coupled to said main tube for detecting intoxicants in a breath of said user when said user blows into said main tube, said sensor assembly using gas chromatography to detect said level of intoxicants;

a microprocessor operationally coupled to said sensor assembly, said microprocessor being configured for coupling to an ignition system of the vehicle such that the ignition system cannot be activated until the user has blown into said main tube, said microprocessor being further configured to prevent activation of the ignition system when a level of intoxicants detected by said sensor assembly is greater than a pre-determined level, said microprocessor being further configured to activate a relay to enable the ignition system to be used to start an engine of the vehicle when said level of intoxicants detected by said sensor assembly is below said pre-determined level;

wherein said sensor assembly comprises:

a sample inlet tube environmentally coupled to said main tube;
a carrier-gas supply flow controller coupled to said sample inlet tube for regulating flow of exhaled breath through said sensor assembly;

a chromatographic column coupled to said carrier-gas supply flow controller, said chromatographic column having an exit;

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a resistance measuring means having an opening positioned adjacent to said exit for measuring electrical resistance of a fluid passing through said exit; and

a column oven coupled to said chromatographic column for heating said exhaled breath as said exhaled breath passes into said chromatographic column whereby elements of said exhaled breath are separated by retention time within said chromatographic column before passing through said exit.

8. (New) The alcohol sensor system for vehicles of claim 7, further comprising:

a locking means for physically preventing turning of an ignition key of the ignition system of the vehicle; and

wherein said microprocessor is operationally coupled to said locking means for selectively causing said locking mean physically preventing turning of said ignition key when said level of intoxicants detected by said sensor assembly is over a pre-determined level.

9. (New) The alcohol sensor system of claim 7, wherein said resistance measuring means comprises:

a silicone wafer defining said opening of said resistance measuring means;

a pair of thermal detectors each having a plurality of serpentine strands of nickel wire, said thermal detectors being positioned proximate said opening; and

a wheatstone bridge being attached to said thermal detectors.

10. (New) The alcohol sensor system of claim 9 wherein each of said strands of nickel wire is approximately 20 microns thick and approximately one inch long.